REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. Objection to Drawings.

The Examiner objected to the drawings for the stated reason that the drawings did not show the motor/generator controller recited in Claim 19, and requested that the Applicant submit a proposed drawing correction or corrected drawings.

In response, the Applicant respectfully notes that the drawings schematically depict the motor/generator controller disclosed in Claim 19. As an example, refer to block 28 in FIG. 4. That block, which is labeled "motor controller", is connected to block 24 which is labeled "motor/generator". In this regard, note that the terms "motor controller" and "motor/generator controller" are used interchangeably in the specification. See, page 7, lines 20-22, for example, which states that

> "all references to the terms "motor" or "motor controller" in the specification and claims are intended to encompass either a motor and a motor controller or a motor/generator and motor/generator controller, respectively."

Therefore, block 28 in FIG. 4 is to be construed depicting a "motor/generator controller" as recited in Claim 19 as well as a "motor controller" or "generator controller" as recited in other claims.

Similarly, page 9, line 19 through page 8, line 2, state that

> "all references to the terms "generator" or "generator controller" in the specification and claims are intended to encompass either a generator and a generator controller or a generator/motor and generator/motor controller, respectively."

To assist the reader with understanding the foregoing, the Applicant is submitting a proposed drawing amendment which re-labels block 28 in FIG. 4 from "motor

controller" to "motor/generator controller". The use of such terminology is consistent with the specification as well as with block 24 in FIG. 4 which refers to a "motor/generator". Similar changes have been made to FIG. 5 and FIG. 6. *As can be seen from the above discussion, no new matter has been added, and approval of the proposed drawing correction is respectfully requested.*

2. Rejection of Claims 1-24 under 35 U.S.C. §112, first paragraph and second paragraph.

Claims 1-24 were rejected by the Examiner under 35 U.S.C. §112, first paragraph, for the stated reasons the specification does not support the recitations in the claims that "at any given vehicle speed" the motor controller and CVT can vary engine speed and power, and that the result is to affect acceleration and deceleration of the vehicle without changing vehicle speed.

Claims 1-24 were also rejected under 35 U.S.C. §112, second paragraph for the stated reason that the claims recite that the motor controller and transmission vary the engine speed without changing the vehicle speed. In this regard, the Examiner asked how the engine speed can be varied without affecting the speed of the vehicle.

In response, the Applicant first notes that the claims have been amended as will be discussed below to distinguish the invention from the cited references. As a result, the claim language which the Examiner indicated does not meet the requirements of §112, first paragraph and second paragraph, has been replaced with amendatory language. Therefore, the rejection is now moot.

Notwithstanding the above, the Applicant respectfully traverses the grounds for rejection and submits that the specification fully supports the original language of the

claims. The following explanation of the Applicant's reasons for traversal is provided to assist the Examiner with a better understanding of the Applicant's invention.

With respect to the §112, first paragraph and second paragraph rejections, pages 14-16 of the specification explain the relationship between engine speed, vehicle speed, and acceleration/deceleration recited in the claim language objected to by the Examiner. While the exact language of the claims is not repeated in the specification, one of ordinary skill would understand the language therein to correspond to the succinct statements in the claims. As explained in the specification, the CVT allows independent control of engine speed and vehicle speed. The equation and discussion on page 15 shows this relationship. Furthermore, the equation on page 16 shows that deceleration and acceleration use different equations due to power versus torque control. In addition, the Applicant respectfully notes that not only are these relationships described in the above-cited portions of the specification, but would be readily understood by one of ordinary skill in view of the specification as described below.

In the discussion of the rejection under §112, second paragraph, the Examiner asks how the motor controller and the transmission can vary engine speed without affecting the speed of the vehicle. The answer is because, in the present invention, the CVT decouples engine speed and vehicle speed. For example, vehicle speed can be held constant by changing the ratio of the CVT in response to a change in engine speed. In other words, engine speed does not necessarily control vehicle speed.

The Examiner also asks "if the engine were accelerated, wouldn't the speed of the vehicle also be accelerated?" The answer is no for several reasons. First, in the

present invention, the vehicle will not accelerate unless engine power increases. This is because, as stated above, the present invention decouples the engine speed and vehicle speed through the use of the CVT. Note also that, mathematically, the instantaneous velocity of an object does not change as the object accelerates and decelerates.

Therefore, the Applicant respectfully submits that the §112 first paragraph and second paragraph rejections should be withdrawn as the claims prior to amendment herein. As stated above, however, the Applicant has amended the claims in a manner that now renders those rejections moot.

3. Rejection of Claims 1-24 under 35 U.S.C. §103.

(a) Summary of Rejection.

Claims 1-11 and 21-24 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Ibaraki et al. (U.S. No. 6,098,733), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

Claims 12-18 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Yamaguchi (U.S. No. 5,806,617), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

Claims 19 and 20 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Yamaguchi (U.S. No. 5,806,617), Kawakatsu et al. (U.S. No. 4,470,132), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

(b) Summary of Response.

In response to the rejection, the Applicant has carefully reviewed the references cited by the Examiner and respectfully submits that the cited references do not, singly

or in combination, teach several aspects of the Applicant's invention. Accordingly, the Applicant has amended the pending claims to recite aspects of the invention that clearly distinguish the invention from any of the cited references. These amendments are made by the Applicant without disclaimer or prejudice to filing a continuation application directed to the subject matter of the claims prior to the amendment herein, and without waiving the possible traversal of the rejection set forth in this Office Action as applied to those claims.

More specifically, none of the cited references teach, suggest or even hint at (i) controlling the rate of change of ratio of a CVT in combination with (ii) using an electric motor (or generator, generator/motor, or motor/generator) to apply torque to an interconnected internal combustion engine to maintain engine power or torque output substantially along a predetermined operating line, wherein (iii) acceleration and deceleration of the vehicle is controlled by varying motor (or generator, generator/motor, or motor/generator torque and rate of change of ratio of the CVT while the engine is operating along an ideal operating line.

(c) Statement of Support for Claim Amendments.

Support for the amendments to the pending claims can be found in FIG. 4 through FIG. 6 and FIG. 8 of the drawings and the discussion on pages 14-17 of the specification.

For example, the Applicant has amended the claims to refer to a "system controller" that performs the functions of varying the rate of change of the ratio of the CVT and operating a motor (or generator, generator/motor, or motor/generator) simultaneously with the engine to apply motor (or generator, generator/motor, or

motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line.

As to the use of a system controller performing these functions, FIG. 4 depicts a system controller 30, details of which are shown in FIG. 8. As can be seen, the system controller provides control signals to the motor/generator controller 28 (or motor controller, generator controller, generator/motor controller, as the case may be), and to CVT 18. FIG. 4 shows a torque control signal 42 applied to motor/generator controller 28 which will cause motor/generator controller 28 to apply positive or negative torque to the engine output. FIG. 4 also shows the rate of change of ratio $\dot{R}$ control signal applied to CVT 18. Additionally, FIG. 8 and the discussion on pages 14-17 of the specification clearly show that the system controller performs the functions recited in the claims either directly or by operating intermediate controllers (e.g., motor/generator controller 28).

Furthermore, it has already been established through the prosecution of this application that the invention includes a controller configured to vary the rate of change of the ratio of the CVT (e.g., see Claim 19). It was also established that the invention includes a controller configured to operate a motor (or generator, generator/motor, or motor/generator) simultaneously with the engine and apply positive or negative motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power output substantially along a predetermined operating line (see pending claims prior to amendment).

Also, as discussed previously herein, page 7, lines 20-22 of the specification state that

> "all references to the terms "motor" or "motor controller" in the specification and claims are intended to encompass either a motor and a motor controller or a motor/generator and motor/generator controller, respectively."

Accordingly, the terms motor controller, motor/generator controller, etc. have been replaced with the term "system controller" where applicable in the amended claims to more accurately recite the subject matter of the invention and provide for consistency between the claims and the specification. The Applicant has amended the claims to more clearly indicate that the system controller performs those functions rather than the intermediate controllers alone, and the amendment is supported by the specification and drawings for the reasons explained above.

Next, the claims have been amended to recited that the system controller varies acceleration and deceleration of the vehicle by varying motor (or generator, generator/motor, or motor/generator) torque, and varying the rate of change of ratio of the continuously variable transmission.

As discussed above, the claims recite that the system controller is configured to vary the rate of change of ratio of the CVT. The system controller is also configured to operate the motor (or generator, generator/motor, or motor/generator) simultaneously with the engine to apply torque (e.g., motor, generator, generator/motor, or motor/generator torque) to the output of the engine. Support for these recitations in the claims was also discussed above.

Support for the recitation in the claims that acceleration and deceleration of the vehicle can be controlled in this manner can be found at pages 14-17 of the specification. For example, the equations on page 14 of the specification and the related discussion show the relationship between acceleration, rate of change of ratio

and motor torque. Similarly, the equation on page 15 of the specification and related discussion show the relationship between the rate of change of ratio and motor torque for purposes of deceleration.

The Applicant respectfully notes that the discussion above is intended to provide examples where support for the claim amendments can be found, and should not be considered to be limiting in any way. Support for all of the limitations of the claims can be found throughout the specification and drawings.

The Applicant has amended the claims to refer to applying motor (or generator, motor/generator, or generator/motor) torque instead of "positive or negative ... torque". The "positive or negative" torque limitation was unnecessary and inaccurate in certain respects. It will be appreciated that the function of a motor, generator, motor/generator, or generator/motor in the Applicant's invention is to apply torque to the output of the engine. Application of positive torque results from using a motor and negative torque from using a generator, while a motor/generator or generator/motor can apply either positive or negative torque.

Lastly, the Applicant has amended the claims to recite that engine power or torque output can be maintained substantially along a predetermined operating line. Power control and torque control are described at page 11, line 20 through page 12, line 5 of the Applicant's specification and, therefore, no new matter has been added. The purpose of the amendment is prevent the claims from being interpreted as limited to power control only, although one of ordinary skill would interpreted the capability of power control to include torque control as well. However, the amendment is not to be construed as requiring the system controller to be configured to provide both power

control and torque control. The claims are intended to be interpreted as covering a system controller which is configured to provide only power control, a system controller which is configured to provide only torque control, or a system controller which is configured to provide both power control and torque control, as well as a system controller configured for any variation thereof.

(d) Discussion of Differences between Amended Claims and Cited References.

The Applicant's invention, as set forth in the amended claims, is directed to an apparatus wherein a system controller is configured to operate a motor (or motor/generator, generator, or generator/motor) simultaneously with an internal combustion engine to torque (e.g., motor, generator, generator/motor, or motor/generator torque) to the output of the engine. As discussed in the Applicant's prior responses and as can be seen from the specification, the net effect of doing so is to provide for torque and power regulation. In addition, the system controller is configured to control the rate of change of ratio $\dot{R}$ of the CVT and not the ratio R directly. These elements, in combination, provide for control of the acceleration and deceleration of the vehicle while the engine power output (or torque output) is maintained substantially along a predetermined operating line.

A close reading of the references cited by the Examiner shows that, while some (but not all) of the references teach the use of a CVT in various vehicle configurations, those references teach only directly controlling the ratio R of the CVT, which is a conventional control parameter. The cited references do not, however, address controlling the rate of change of the ratio $\dot{R}$ which is the derivative of the ratio

$\left(\dot{R} = \frac{dR}{dt}\right)$. Controlling the rate of change of ratio $\dot{R}$ is a fundamentally different approach than controlling the ratio R and has different effects on the operation of the vehicle as described in the Applicant's specification.

In stark contrast to the Applicant's invention as recited in the amended claims, none of the references cited by the Examiner, whether taken singly or in combination, teach, suggest, provide motivation or incentive, or even hint at (i) controlling the rate of change of ratio $\dot{R}$ of a CVT in combination with (ii) using an electric motor (or generator, generator/motor, or motor/generator) to apply torque to an interconnected internal combustion engine to maintain engine power output substantially along a predetermined operating line, wherein (iii) acceleration and deceleration of the vehicle is controlled by varying motor (or generator, generator/motor, or motor generator) torque and rate of change of ratio $\dot{R}$ of the CVT.

(i) The cited combined teachings of Ibaraki et al. (U.S. No. 6,098,733), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

Claims 1-11 and 21-24 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Ibaraki et al. (U.S. No. 6,098,733), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953). Claims 1, 9, and 21-24 are independent.

Ibaraki et al. (U.S. No. 6,098,733) does not teach the use of a CVT. Ibaraki et al. '733 teaches use of an automatic transmission that is discretely variable. More specifically, Ibaraki et al. '733 teaches the use of a torque converter and discrete

transmission where the speed ratio of the transmission is controlled. FIG. 10 of Ibaraki et al. '733 shows that Ibaraki et al. '733 is simply shifting gears for normal shift control (see block S3-7). Because Ibaraki et al. '733 does not teach using a CVT, the cited reference cannot by definition teach controlling a CVT.

Furthermore, Ibaraki et al. '733 does not teach, suggest, or provide any motivation or incentive for controlling the rate of change of ratio $\dot{R}$ of a CVT.

The Examiner states that col. 24, lines 53-55 of Ibaraki et al. '733 teaches controlling the rate of change of ratio. The Examiner's statement is in error, however, because the cited portion of Ibaraki et al. '733 specifically refers to a controller for controlling a transmission "to change a speed ratio thereof" and not the rate of change of ratio of a CVT. In the cited passage, Ibaraki et al. is describing a discrete ratio change and not the derivative (rate of change).

The Examiner also states that Ibaraki et al. '733 teaches a motor controller 28 that varies positive and negative output torque, citing col. 24, lines 1-5 as support. However, col. 24, lines 1-5 are silent about applying motor (or generator, motor/generator, or generator/motor) torque; in fact, the word "torque" does not even appear in the cited portion of Ibaraki et al. '733. Furthermore, the Examiner admits that Ibaraki et al. '733 does not disclose directly varying the engine output with an electric motor.

Therefore, Ibaraki et al. '733 has been misapplied to Claims 1-11 and 21-24 as a base reference and the rejection should be withdrawn. As shown above, Ibaraki et al. '733 does not teach what it is purported to teach. Furthermore, the cited reference does not teach, suggest or provide motivation or incentive for

controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line. Additionally, since Ibaraki et al. '733 does not teach either of the above limitations of the Applicant's claims, it is not possible for Ibaraki et al. '733 to teach controlling acceleration and deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

Having established that Ibaraki et al. '733 has been misapplied and does not teach the elements of the Applicant's invention which it is purported to teach, we now look further at the combination of Ibaraki et al. '733 with Ibaraki et al. '882 and Morimoto '952. Since Ibaraki et al. '733 does not teach what the Examiner purports it to teach, it is necessary to look to Ibaraki et al. '882 and Morimoto '953 to determine if either or both of those cited references supply what is missing in Ibaraki et al. '773.

To begin, note that Ibaraki et al. '882 does not even hint at controlling the rate of change of ratio $\dot{R}$ in a CVT. As with Ibaraki et al. '773, the '882 reference teaches using a discrete transmission and shifting gears. While the gear ratio may change, there is nothing in the cited reference that teaches, suggests or provides motivation or incentive for controlling the rate of change of ratio $\dot{R}$ in a CVT. Note that the Examiner did not assert that Ibaraki et al. '882 discloses controlling the rate of change of ratio.

The Examiner did assert, however, that Ibaraki et al. '882 teaches that the torque can be varied depending on the need of the vehicle, citing claim 5 and col. 4, lines 26-

30 as support. The Applicant respectfully disagrees because the cited portions of Ibaraki et al. '882 do not refer to controlling torque in any way. Claim 5 refers only to using speed and torque of the engine and electric motor as parameters for calculating fuel consumption. Similarly, col. 4, lines 26-30 state only that fuel consumption or exhaust emissions can be obtained on the basis of the engine speed and torque which vary with the specific running condition of the vehicle. *Neither portion of Ibaraki et al. '882 cited by the Examiner teaches anything about controlling the engine output by applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line as recited in the Applicant's claims.*

Also, since Ibaraki et al. '882 does not teach controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line, it is not possible for Ibaraki et al. '882 to teach controlling acceleration and deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

Lastly, by way of an additional comment, the Applicant respectfully notes that the provision of surplus power by Ibaraki et al. '882 that is referred to by the Examiner in the Office Action has no relevance to the elements recited in the Applicant's claims. One of ordinary skill in the art will appreciate that the Applicant's invention is designed to provide the power commanded by the driver without requiring surplus power.

Therefore, Ibaraki et al. '882 has also been misapplied to Claims 1-11 and 21-24 and the rejection should be withdrawn. Not only does Ibaraki et al. '882 not teach what it is purported to teach, but the cited reference does not teach, suggest or provide motivation or incentive for controlling the rate of change of ratio $\dot{R}$ ***in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line or controlling acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.***

This leaves only Morimoto '953. It is true that Morimoto '953 teaches the use of a CVT. Additionally, Morimoto '953 teaches the use of a transmission ratio control system for controlling the transmission ratio. However, there is nothing in Morimoto '952 that refers to controlling the rate of change of ratio $\dot{R}$ of a CVT. Morimoto '953 only teaches controlling the transmission ratio R (see, for example, abstract line 3 and FIG. 5, block S108). This is not the same as controlling the rate of change of ratio $\dot{R}$, which is the derivative of the ratio R.

Referring more specifically to FIG. 5 of Morimoto '953, note blocks S103, S106 and S108 which refer to calculating the desired transmission ratio. The desired ratio is then input to the transmission ratio control at block S109. Col. 6, lines 40-43 of Morimoto '953 indicate that the transmission ratio is being controlled to control the speed of the vehicle. An acceleration or deceleration signal is applied to the desired

transmission ratio calculator 42 to obtain the desired transmission ratio id (see col. 5, lines 4-8).

What Morimoto '953 teaches essentially is a cruise control system that adjusts the transmission ratio. If the vehicle slows down, Morimoto '953 speeds up the vehicle and vice versa. While Morimoto '953 teaches calculating a transmission ratio and a related control system, it does not teach computing or controlling the rate of change of ratio $\dot{R}$ in a CVT.

Nor does Morimoto et al. '953 teach anything about controlling the engine output by applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line. Although the Examiner states that Morimoto et al. '953 teaches that the CVT can be used to decrease the power of the engine and to vary the speed of the engine (citing the abstract and col. 6, lines 54-58), the abstract actually refers to varying the speed of the vehicle (not the engine) and col. 6, lines 54-58 actually refer to downshifting the transmission to decrease engine power for deceleration. There is simply nothing in the cited reference that teaches, suggests or provides motivation or incentive for controlling the engine output by applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line.

It will be appreciated, therefore, that since Morimoto '953 does not teach controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line, it is not

possible for Morimoto '953 to teach controlling acceleration and deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

Lastly, the Applicant respectfully notes that the Examiner observed the fact that Morimoto '953 addresses and controls shock during quick deceleration. Morimoto '953 experiences shock because Morimoto '953 is controlling the transmission ratio. Shock is experienced, for example, when the vehicle slows before it speed up; hence, a jolt. In the Applicant's invention, shock is eliminated by controlling acceleration or deceleration through the control of the rate of change of ratio $\dot{R}$. Morimoto '953 does not recognize cause of the shock, or the Applicant's solution, and controls only the ratio of the CVT.

Therefore, Morimoto '953 does not teach, suggest or provide motivation or incentive for controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line or controlling acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

In short, the cited combination or Ibaraki et al. '733, Ibaraki et al. '882 and Morimoto '953 does not, and cannot by what the combination actually discloses, teach, suggest or provide motivation or incentive for the invention recited in the Applicant's claims when none of the references even hints at the foregoing elements. Therefore,

the Applicant respectfully submits that the rejection should be withdrawn.

(ii) The cited combined teachings of Yamaguchi (U.S. No. 5,806,617), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

Next, Claims 12-18 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Yamaguchi (U.S. No. 5,806,617), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953). Claim 12 is independent.

To begin, note that amended Claim 12 includes the limitations discussed above with regard to the rejections based on Ibaraki et al. '733, Ibaraki et al. '882 and Morimoto '953. Since the Applicant has already clearly shown above the inapplicability of those references, the only reference that need be considered is Yamaguchi '617 to determine if it supplies what the other cited references do not supply.

Note that the Examiner did not identify which Yamaguchi reference was being cited, and there are several Yamaguchi references of record. The Applicant has reviewed those various references and has matched the Examiner's discussion to Yamaguchi '617. Accordingly, that reference will be addressed herein.

Referring then to Yamaguchi '617, a close reading shows that nothing in the cited reference refers to controlling the rate of change of ratio $\dot{R}$ of a CVT. Yamaguchi '617 essentially teaches an electric CVT but not the control of the CVT characteristics. The cited reference is silent in this respect and does not teach, suggest or provide motivation or incentive for controlling the rate of change of ratio $\dot{R}$ of a CVT.

Nor does Yamaguchi '617 teach anything about controlling the engine output by applying motor (or generator, generator/motor, or motor/generator) torque to the engine

output to maintain engine power output substantially along a predetermined operating line. In fact, the Examiner admits in the Office Action that "Yamaguchi does not directly disclose varying the engine output." There is simply nothing in the cited reference that teaches, suggests or provides motivation or incentive for controlling the engine output by applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line.

It will be appreciated, therefore, that since Yamaguchi '617 does not teach controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line, it is not possible for Yamaguchi '617 to teach controlling acceleration and deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

Therefore, while Yamaguchi '617 appears to teach controlling electric motor torque to compensate for engine output to achieve efficient operation of the vehicle, Yamaguchi '617 does not does not teach, suggest or provide motivation or incentive for controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line or controlling acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate

of change of ratio as recited in the Applicant's claims.

In short, the cited combination of Yamaguchi '617, Ibaraki et al. '882 and Morimoto '953 does not, and cannot by what the combination actually discloses, teach, suggest or provide motivation or incentive for the invention recited in the Applicant's claims when none of the references even hints at the foregoing elements. Therefore, the Applicant respectfully submits that the rejection should be withdrawn.

(iii) The cited combined teachings of Yamaguchi (U.S. No. 5,806,617), Kawakatsu et al. (U.S. No. 4,470,132), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953).

Claims 19 and 20 were rejected under 35 U.S.C. §103 as being obvious in view of the combined teachings of Yamaguchi (U.S. No. 5,806,617), Kawakatsu et al. (U.S. No. 4,470,132), Ibaraki et al. (U.S. No. 5,789,882) and Morimoto (U.S. No. 4,947,953). Claims 19 and 20 are independent.

As a starting point, note that amended Claims 19 and 20 include the limitations discussed above with regard to the rejections based on Ibaraki et al. '733, Yamaguchi '617, Ibaraki et al. '882 and Morimoto '953. Therefore, since the Applicant has already clearly shown above the inapplicability of those references, the only reference that need be considered is Kawakatsu et al. '132 to determine if it supplies what the other cited references do not supply. The answer is no.

Kawakatsu et al. '132 is not relevant to the invention recited in the Applicant's claims. The control means referenced by the Examiner as being used for varying torque output (col. 22, lines 18-22) does not perform the same function as recited in the Applicant's claims. In the cited portion of Kawakatsu et al. '132, the control means is for

controlling the throttle control means and the motor control means. The motor control means disclosed in Kawakatsu et al. '132 simply varies motor torque based on operating characteristics. There is nothing in the cited passage that even hints at applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line as recited in the Applicant's claims.

Nor does Kawakatsu et al. '132 teach controlling rate of change of ratio $\dot{R}$ in a CVT as recited in the Applicant's claims. There is simply no discussion whatsoever regarding controlling the rate of change of ratio $\dot{R}$, and the Examiner has not cited Kawakatsu et al. in relation thereto.

Additionally, it can clearly be seen, therefore, that the cited reference cannot teach controlling acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio $\dot{R}$ in a CVT as recited in the Applicant's claims since it does not teach the above-described elements that affect that control.

Therefore, Kawakatsu et al. '132 does not does not teach, suggest or provide motivation or incentive for controlling the rate of change of ratio $\dot{R}$ in a CVT or applying motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line or controlling acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio as recited in the Applicant's claims.

In short, the cited combination of Yamaguchi '617, Kawakatsu et al. '132, Ibaraki et al. '882 and Morimoto '953 does not, and cannot by what the combination discloses, teach, suggest or provide motivation or incentive for the invention recited in the Applicant's claims when none of the references even hints at the foregoing elements. Therefore, the Applicant respectfully submits that the rejection should be withdrawn.

4. Additional Claim Amendments.

The Applicant notes that Claim 3 was previously canceled. Claim 4 has been amended to depend from Claim 2 and recite that the system controller operates the motor/generator to apply positive and negative torque. Claim 5 has been amended to recite that the system controller operates the motor to apply positive torque. Claims 6-8 have been canceled as unnecessary. Claim 10 has been amended to recite that the system controller operates the motor to apply positive torque. Claim 11 has been amended to recite that the motor comprises a motor/generator and that the system controller operates the motor/generator to apply positive or negative torque. Claim 14 has been amended to depend from Claim 13 and to recite that the system controller operates the generator/motor to apply positive or negative torque. Claim 15 has been amended to recite that the system controller operates the generator to apply negative torque. Claim 16 has been amended to recite that the system controller is configured to vary torque output of the motor. Claim 18 has been canceled as unnecessary. Claims 21-24 have been amended to recite a motor/generator rather than a motor for consistency with application of positive or negative torque in those claims.

No new matter has been added; these amendments are consistent with the discussion above.

5. Conclusion.

As shown above, none of the cited references, singly or in combination teach, suggest or provide motivation or incentive an apparatus which is configured to (i) control the rate of change of ratio $\dot{R}$ in a CVT, (ii) apply motor (or generator, generator/motor, or motor/generator) torque to the engine output to maintain engine power or torque output substantially along a predetermined operating line, and (iii) control acceleration or deceleration by varying motor (or generator, generator/motor, or motor/generator) torque and rate of change of ratio. In view of the foregoing, the Applicant respectfully submits that each of the pending claims is now in a condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

The Applicant also respectfully requests a telephone interview with the Examiner in the event that there are questions regarding this response, or if the next action on the merits is not an allowance of all pending claims.

Date: 5/5/03

Respectfully submitted,

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